



JASON MOORE 2017-08-20

NATURE, GEOPOWER, & CAPITALOGENIC APPROPRIATION

GENERICSCIENCE APPROPRIATION, CAPITALISM, CAPITALOCENE, CHEAP NATURE, GEOPOWER, MARXISM

The rise of capitalism flowed through a new praxis: not only of Cheap Labor, but of Cheap Nature. After 1450, land productivity gave way to labor productivity as the metric of wealth. It was an ingenious civilizational strategy. New value-oriented *technics* – crystallizations of tools and ideas, power and nature – allowed the prodigious appropriation of uncommodified work/energy so as to advance labor productivity. The great leap forward in the scale, scope, and speed of landscape and biological transformations in the three centuries after 1450 – stretching from Poland to Brazil, and the North Atlantic's cod fisheries to Southeast Asia's spice islands – may be understood in this light (Moore, 2017).

This global landscape revolution revealed the power of capitalogenic appropriation: the mobilization of unpaid work/energy to advance the production of surplus value (Moore 2015). As we shall see, imperialism – as a combination of modern technics and violence – was central to this story. But imperialism was not the whole story. It must be complemented by the ongoing revolutions in property and gender relations within Europe, through which agro-ecologies and women could be put to work cheaply (Brenner 1976; Federici 2004). Thus the new labor productivity (as surplus value) excluded most humanly productive work – never mind the work of extra-human natures.

This was different from medieval Europe. While feudalism powerfully reshaped Continental landscapes between the ninth and fourteenth centuries, the very terms of the lord-peasant relation moderated environmental devastation. Because the surplus derived from land rather than labor productivity, the rapid exhaustion of land threatened the reproduction of both peasant and seigneur. Mutual interdependency, coupled with modest capacities for geographical mobility, was embodied and reproduced through a view of nature that stressed “the whole before the parts.” It was, to be sure, an unequal whole – but as an “integrated system of nature and society” (Merchant 1980, 70-72). That integrated system broke down quickly in the century after 1492.

Cheap Nature emerged out of the wreckage of feudal crisis. The “intellectual peace” of lord and peasant yielded to intellectual war, detonated by entangled climatic, agro-ecological, and class ferment of the early fourteenth century (quotation from Schumpeter 1942, 124). That cultural destabilization was progressively reinforced across the next two centuries, not least by the Black Death, escalating class struggles, and intensified warfare.

By the end of the sixteenth century, a tipping point had been reached. The web of life was becoming Nature: a “new ethic sanctioning the exploitation of Nature” (Merchant 1980, 164). Early capitalism’s world-praxis, fusing cultural and material transformation, advanced an audacious fetishization of nature. This was expressed, dramatically, in the era’s cartographic, scientific, and quantifying revolutions. These were the symbolic moments of primitive accumulation, creating a new mode of thought. Personified by Francis Bacon and Renee Descartes, that new mode presumed the separation of humans from the rest of nature, and the domination of the latter by the former. For early modern materialism, the point was not only to interpret the world but to control it: “to make ourselves as it were the masters and possessors of nature” (Descartes 2006, 51).

Two epoch-making inventions occurred over this span. One was the invention of New World (Mignolo, 1995). This invention does not begin with the invasion of the Americas but with the colonization and conquest of the Atlantic islands and completion of the Reconquista in the half-century before 1492. Here was a new form of conquest, premised on new “technologies of distance” (Porter 1995, ix), beginning with the new cartography (portolan charts) and shipbuilding (caravels). The second was the invention of progressively rationalized “cost-profit calculus” (Schumpeter 1942, 123). While double-entry bookkeeping – like the mechanical clock – was invented in the late thirteenth century, this was only an expressive moment of a calculative revolution that reshaped the world – and Western Rationality (Gleeson-White 2012; Weber 1978). While its directly causal role in the rise of capitalism is open to debate, double-entry bookkeeping – both as practice and as a wider epistemic mode – unquestionably marked a key moment in this calculative revolution. Double entry bookkeeping’s rapid diffusion from its north Italian hearth dates from – not coincidentally – the 1490s (Pacioli 1494; Mills 1994). That diffusion carried the accounting system to the Andes after 1531, where it was among the key “elements of Spanish civil administration and ecclesiastical practice” (Urton 2009, 802). For Schumpeter, double entry’s diffusion after the 1490s marked a turning point in an evolving Western Rationality, increasing captured by cost-profit calculus. Cost-profit accounting would thenceforth lead a “conqueror’s career,” in at least two ways. It channeled Western Rationality into a profoundly economic rationality: “by crystallizing and defining numerically, it powerfully propel[ed] the logic of enterprise.” And across a wider field, it proceeded by “subjugating — rationalizing — man’s tools and philosophies, his medical practice, his picture of the cosmos, his outlook on life, everything in fact including his concepts of beauty and justice and his spiritual ambitions” (Schumpeter 1942, 123-24).

Geopower, Geo-Managerialism, and Accumulation by Appropriation

This transition established capitalism’s rules of reproduction. The Capitalocene has been premised on great bursts of labor productivity advance enabled by even greater bursts of appropriating Cheap Natures. Eras of agricultural and industrial revolutions are tightly connected to successive “new” imperialisms. The logic is simple enough. Advancing labor productivity is rising material throughput for every unit of socially necessary labor-time. Rising throughput places demands on place-specific re/production of labor, food, energy, and raw materials. As throughput rises, so too the value composition of the Big Four inputs. Re/production costs rise, squeezing the rate of profit. Thence the search for new Cheap Natures commences.[1]

This capital-logic model highlights the great weakness of capital. Capitalists are victims of their own success. To the extent that productivity advances in wide-ranging fashion, input costs rise, and one two things must occur: boom turns to bust or new sources of supply are found. On a systemic level, however, new sources of supply are not easy to locate and put to work. Capitalist organizations are not well-equipped to map, code, survey, quantify and otherwise identify and facilitate *new* sources of Cheap Nature.

If capital is not well-suited to do this, the modern state is. Thus at the heart of modern capitalism is not only state and geopolitical power but *geopower*. Geopower emerges at the nexus of big science, big states, and “technologies of power that make territory and the biosphere accessible, legible, knowable, and utilizable” (Parenti 2016, 117). If geopower enforces Nature, it also renders Nature a motor of accumulation through the production of abstract social nature. This is *accumulation by appropriation*, the process of creating surplus profit via geopower and its production of abstract social nature. If the substance of abstract social labor is time (socially necessary labor-time), the substance of abstract social nature is space. The two moments form a contradictory unity: the spatio-temporality of capitalism as a way of organizing nature. While managerial procedures within commodity production aim to maximize productivity per quantum of abstract labor, the geo-managerial capacities of states and empires pursue the identification and maximization of unpaid work/energy per unit of abstract nature. The managerial imperative to appropriate workers’ knowledge in the production process – classically illustrated by Braverman’s “de-skilling thesis” – finds its world-historical complement in *geo-managerialism*: the “separation of conception from execution” in capitalism’s co-production of nature (1974, 79). Like labor process restructuring, geo-managerialism entails the deployment of knowledge as a force of production. This allows us incorporate intellectual labor into our thinking about the labor/land nexus of agrarian and planetary change. It has involved a long history of bioprospecting, from Columbus to Monsanto. Geo-managerialism is the specific form of geopower tasked with making Nature legible.

Acting through geo-managerial principles, successive state-capital-science complexes produce “units” of Nature that are located, or reproduce themselves, largely outside the cash nexus. Geo-managerialism’s preliminary forms emerged rapidly during – and facilitated – the rise of capitalism, through the production of real abstractions of time (linear), space (flat), and nature (external). Its chief historical expressions comprise those processes through which capitalists and state-machineries map, identify, quantify, and otherwise make Nature legible to capital. Just as the conflict of bourgeois and proletarian manifests through a struggle over

whose knowledge dominates, so the antagonism of capitalism in the web of life unfolds through a contest over whose geographical and geophysical knowledge dominates – obviously a pivotal issue in today's politics of food and climate justice.

Geopower seeks “to capture and contain the forces of Nature by operationally deploying advanced technologies, and thereby linking many of Nature's apparently intrinsic structures and processes to strategies of highly rationalized environmental management” – and capital accumulation (Luke 1996, 2). In this light, the modern state re/produces the conditions of capital accumulation by making manifold natures – including human natures – legible for capital. These forms vary according to the mix of accumulation by capitalization and appropriation obtaining across the uneven time-space of the capitalist world-ecology. Every era of capitalism embodies not only dominant class structures and economic forms but also new regimes of geopower and geocoding, through which dispossession and appropriation occur (Harris 2004).

The idea of Nature as external has worked so effectively – and for so long – for this reason. Effective power in the modern world pivots on the capacity to restore the conditions of capital accumulation (Arrighi 1994). Systemwide material expansions cannot resume without greatly expanded new flows, and new kinds, of Nature. Imperialism effects de-Humanization to this end: the better to cheaply extract the work and wealth of human and other natures in peripheries old and new.

It is cyclical and cumulative process. Because natures are historical and therefore finite, the exhaustion of one zone quickly prompts the “discovery” of new natures that deliver untapped sources of unpaid work. Thus did the Kew Gardens of British hegemony yield to the American century's International Agricultural Research Centers, superseded in turn by the neoliberal era's bioprospecting, rent-seeking, and genomic mapping practices (Brockway 1978; Kloppenborg 1988; McAfee 1999, 2003.)

Not only is capitalism bound up with a historically-specific nature; so are its specific phases of development. Each long century of accumulation does not “tap” an external nature that exists as a warehouse of resources. This does not mean new resources are conjured out of thin air. Resources *become* through history (Zimmerman 1951). Coal changed the world once the relations of class and capital activated its potential (Malm 2016). That activation depended, in turn, on colonial movements of de-Humanization – the “second slavery” of the nineteenth century (Tomich 2004). Each such long wave creates – and is created by – a historical nature that offers a new, specific set of constraints and opportunities. The accumulation strategies that work at the beginning of a cycle – creating particular historical natures through science, technology, and new forms of territoriality and governance (abstract social nature)—progressively exhaust the relations of reproduction that supply the Four Cheaps. At some point, this exhaustion registers in rising commodity prices and faltering profitability.

Joining the appropriation of Cheap Natures to the exploitation of commodified labor-power allows us to unravel some of the mysteries of early capitalism. A civilization with few significant resource or technological advantages, it nevertheless developed epoch-making capacities to reshape life and landscapes worldwide. One fruitful point of entry into this discussion is Marx's argument that use- and exchange-value represent “*on the surface*” the “internal opposition of use-value and value” (Marx 1977, 153, 209). This internal opposition contrasts with eco-Marxism's tendency to deploy use- and exchange-value absent the value relations that form and re-form socially necessary labor-time (e.g. Foster et al. 2010; see Moore 2017b). Marx's opening discussion in *Capital* is pitched at so high a level of abstraction that I think the explosive implications of this “internal opposition” have been missed. To say that value and use-value are *internally related* is to say that the value relation extends far beyond the point of production. Such a connection allows us to join definite “modes of production” and definite “modes of life” in concrete historical unities (Marx and Engels 1970, 42).

Biographical sketch

Jason W. Moore, a world historian and historical geographer, is associate professor of Sociology at Binghamton University. He is author of several books, mostly recently *Capitalism in the Web of Life* (Verso, 2015), *Ecologia-mondo e crisi del capitalismo: La fine della natura a buon mercato* (Ombre Corte, 2015), and editor of *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (PM Press, 2016). He coordinates the World-Ecology Research Network, and is presently completing *Seven Cheap Things: A World-Ecological Manifesto* (with Raj Patel) and *Ecology of the Rise of Capitalism*, both for the University of California Press. This essay draws on “The Capitalocene, Part II: Accumulation by Appropriation and the Centrality of Unpaid Work/Energy,” forthcoming, *The Journal of Peasant Studies*.

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- [1] Presented here as a logical sequence, the historical geography of this process is dynamic, overlapping, and considerably messier (Moore 2015).
- taken form here
- Foto: Bernhard Weber

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